

FOREST SERVICE
SPECIFICATIONS FOR
MAINTENANCE OF
ROADS IN
TIMBER SALES

PACIFIC NORTHWEST REGION

EM 7730-20

JUNE 2020

TIMBER SALE CONTRACT

ROAD MAINTENANCE SPECIFICATIONS

SPEC.#	DESCRIPTION	Date
T-803	Snow Removal	06/2020
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T-838	Maintenance for High Clearance Vehicle Use	06/2020
T-839	Maintenance for project Use	06/2020
T-891	Water Supply and Watering	06/2020

NO DRAWINGS ACCOMPANY THESE SPECIFICATIONS.

T-803 - SNOW REMOVAL (06/2020)

803.01 Description

This section provides for removal of snow from roads to facilitate logging operations and safe use.

803.02 Maintenance Requirements

1. Erect signs required by the Sign Plan in the SUPPLEMENTAL SPECIFICATIONS.
2. Perform work in a manner to preserve and protect roads and appurtenances, and prevent erosion damage to roads, streams, and other Forest values.
3. Do not undercut banks. Do not blade gravel or other surfacing material off the road.
4. Keep roadbed, drainage ditches, drain dips, and culverts functional during operations and upon completion of operations.
5. Control snow removal to identify the usable traveled way and roadbed support. Reshape over-width plowing as necessary to define the usable width.
6. Space, construct, and maintain drainage holes in the dike of snow or berm caused by snow removal operations. Place drain holes to obtain surface drainage without discharging on erodible fills.
7. Close roads to wheeled vehicles at times and in the manner specified in C(T)5.12# or the Road Rules document.
8. Upon seasonal completion of Purchaser/Contractor's Operations, effectively block the road by a snow barricade, unless otherwise approved by the Contracting Officer.
9. Remove snow for either public access or project use as established in the SUPPLEMENTAL SPECIFICATIONS and meet the following requirements:
 - a. Removal for Public Access (Method JU) - Remove snow from all the traveled way, including turnouts, for safe and efficient use for both timber haul and the public. Remove intruding windfalls, debris, or slough and slide material for the full width of the traveled way and deposit out of drainages at locations designated by the Contracting Officer.
 - b. Removal for Project Use (Method TS) - Remove snow from all or part of the traveled way, including enough turnouts for safe and efficient use for timber haul and to protect the road. Remove intruding windfalls, debris or slough and slide material and dispose of only as necessary to provide passage for timber transportation. Removed materials may be deposited off the traveled way or outside the traveled way at locations designated by the Contracting Officer.
 - c. When directed by the Contracting Officer, replace surfacing which has been bladed off the road with in-kind material within 60 days of notification. Contracting Officer will notify Purchaser/Contractor in writing as to the cubic yard equivalent of bladed off material by the start of the Normal Operating Season.

803.03 Equipment

Purchaser/Contractor may use any type of equipment to remove snow, providing:

1. Type or use of equipment is not restricted in C(T)5.12# or Road Rules document.
2. Equipment is of the size and type commonly used to remove snow and will not cause damage to the road.
3. The use of plows or dozers to remove snow requires written approval by the Contracting Officer. Equip plows or dozers with shoes or runners to keep the dozer blade a minimum of 2 inches above the road surface unless otherwise approved by the Contracting Officer.

803.04 Ice Control

Ice control may be performed by Purchaser/Contractor when approved by the Contracting Officer in writing. Such approval will include ice control materials, application rates, and any specific requirements of use.

T-811 - BLADING (06/2020)

811.01 Description

This work consists of surface blading the traveled way to a condition that facilitates traffic and provides proper drainage. Blading includes shaping the crown or slope of travel way, berms, and drainage dips in accordance with this specification. Compaction is required when shown on C(T)5.31#

811.02 Maintenance Requirements

1. Timing - Perform surface blading during the contract period as often as needed to provide conditions stated for the maintenance level of the road.
2. General
 - a. Blade and shape the existing traveled way and shoulders, including turnouts, to produce a surface which is uniform, consistent to grade, and crowned or cross-sloped as indicated by the character of the existing surface, unless otherwise shown in C(T)5.31#, to at least ½ inch per 1 foot of width, but not more than ¾ inch per 1 foot of width. Thoroughly loosen surfacing material to no less than 2 inches depth or the depth of potholes or corrugations. Scarification to facilitate cutting to the full depth of potholes or corrugations may be elected but will be considered incidental to blading. Do not scarify to a depth that will cause contamination of the surfacing.
 - b. Apply water during blading when sufficient moisture is not present to prevent segregation. Supply, haul, and apply water in accordance with Section T-891.
 - c. Shape existing native rock or aggregate surfaced drainage dips to divert surface runoff to existing outlet devices, ditches, or discharge locations.
 - d. Establish a blading pattern which provides a uniform driving surface, retains the surfacing on the roadbed, and provides a thorough mixing of the materials within the completed surface width. Upon final blading, no disturbed rock shall protrude more than 2 inches above the adjacent surface unless otherwise provided in the contract. Remove material not meeting this dimension and place outside the roadbed; do not obstruct drainage ways or structures. This material may be scattered off the roadbed if there is free drainage.
 - e. Where DESIGNATED ON THE GROUND, included in C(T)5.31#, SHOWN ON THE DRAWINGS, or as ordered by the Contracting Officer, invasive species of concern prevention practices shall be followed as listed below.

Invasive Species of Concern Prevention Practices
<i>To be filled in by local FS invasive plant specialist, if applicable.</i>

3. Routine Blading
 - a. Conform to the dimensions SHOWN ON THE DRAWINGS or designated in the SUPPLEMENTAL SPECIFICATIONS upon completion of blading.
 - b. Shape roadbed width in excess of the dimensions shown only as needed to provide drainage away from the traveled way. Do not remove established grasses and other vegetation from the excess width except as incidental to providing drainage or unless otherwise provided in the contract.
4. Compaction

Roads requiring compaction will be included in the C(T)5.31#. Unless Compaction Method B is designated in the C(T)5.31#, all traveled ways requiring compaction may be compacted by Method A. Compaction shall commence immediately following blading.

Compaction Method A: Breaking track over full width of traveled way while operating equipment.

Compaction Method B: 7-10 ton pneumatic, steel, or equivalent vibratory roller, operated to cover the full width two (2) times.
5. Undercutting

Undercutting roadway back slope is not permitted.

T-811 - BLADING (06/2020)

6. Intersections

At intersections, blade the roadbeds of side roads which are not closed or restricted from vehicular use to ensure smooth transitions.

- a. Signing, cross ditching in the road surface (traveled way), earth berms, or other devices placed to discourage or eliminate use by passenger cars, are field evidence of road closure or restriction. Roads listed for work under Sections T-835, T-836, T-838, or T-839 are considered restricted.
- b. Side roads listed for work under this Section are not restricted.

7. Cleaning of Structures

Do not allow materials resulting from work under this Section to remain on or in structures, such as bridges, culverts, cattle guards, or drainage dips.

8. Berms

Maintain existing berms to the condition of adjacent segments. Do not create new berms.

9. Smooth Blading

Smooth blading may be used as an interim measure to remove loose surfacing material from the wheel paths. Store removed materials in a recoverable windrow until blade processing as described in this section is feasible. Watering will not be required for smooth blading. Accomplish smooth blading without distorting the existing cross-slope or crown of the traveled way.

Move and store loose surfacing materials on the high side of super-elevated curves and sections with uniform inslope or outslope. In crowned sections, store the material on either or both sides as elected. Windrow and place stored materials to provide not less than 12 feet of smooth traveled way on one-lane segments, or 20 feet of smooth traveled way on two-lane segments, or segments with turnouts. Place holes through windrows for drainage every 500 feet or less to provide drainage

T-813 - SPOT SURFACING (06/2020)

813.01 Description

This work consists of placing surface aggregate as DESIGNATED ON THE GROUND, or as ordered by the Contracting Officer. It includes preparing the area, furnishing, hauling, and placing all necessary materials and other work necessary to blend with the adjacent road cross section.

813.02 Materials

1. Materials will be Government-furnished when stated in the SUPPLEMENTAL SPECIFICATIONS.
2. Materials furnished by the Purchaser/Contractor shall conform to the gradation and quality requirements of Section 703 of the "Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects FP-14 U.S. Customary Units" and FS supplements to the FP-14.
3. All materials transported onto National Forest System land shall be free of invasive species of concern. Written documentation of methods used to determine the invasive species of concern free status of any and all materials furnished by the Purchaser/Contractor shall be submitted for approval to the Contracting Officer before transport of any materials onto NFS System land.

The Contracting Officer shall have 5 days, excluding weekends and Federal holidays, to review the methods and inspect the materials after the required written documentation is provided by the Purchaser/Contractor. After satisfactory review and inspection or after 5 days without review and inspection, the Purchaser/Contractor may transport the material onto National Forest System land. Material receiving unsatisfactory review and inspection shall not be transported onto National Forest System land.

Material or methods appropriate for establishing invasive species of concern free status for the invasive species of concern are listed below.

Invasive Species of Concern
<i>To be filled in by local FS invasive plant specialist, if applicable.</i>
Appropriate Prevention Practices
<i>To be filled in by local FS invasive plant specialist, if applicable.</i>

813.03 Maintenance Requirements

1. Thoroughly loosen the area to be surfaced to a minimum depth of 1 inch prior to placement of aggregate.
2. Mixing and Placing

When scheduled coincidentally with work under Section T-811, and included in the SUPPLEMENTAL SPECIFICATIONS, mix surfacing and existing aggregate with water until a uniform mixture is obtained prior to final shaping and compaction.

Otherwise, spread the material on the prepared area in layers no more than 4 inches in depth. When more than one (1) layer is required, shape and compact each layer before the succeeding layer is placed. Upon completion, the surfacing shall reasonably conform to the adjacent cross section and provide smooth transitions in the road profile.

3. Compaction Methods

Compaction Method A: Breaking track while operating equipment on the traveled way.

Compaction Method B: 7-10 ton pneumatic, steel, or equivalent vibratory roller, operated to cover the full width two (2) times.

Either Method A or B may be used unless Method B is designated in C(T)5.31#.

T-831 - DITCH MAINTENANCE (06/2020)

831.01 Description

This Section provides for routine maintenance of various types of ditches to provide drainage which is unobstructed, as shown on C(T) 5.31# or as Designated on the ground by the Contracting Officer.

831.02 Maintenance Requirements

1. Maintain ditches by removing rock, soil, wood, and other materials. Maintained ditches shall function to meet the intent of the original design.
2. Undercutting backslopes during ditch maintenance operations is not permitted.
3. Suitable material up to 4 inches in greatest dimension removed from the ditches may be blended into existing native road surface and shoulder or placed in designated berm.
4. Do not blend material from ditch cleaning operations into aggregate surfaced roads. Do not blade material across aggregate or bituminous surfaced roads, unless approved in writing by the Contracting Officer.
5. Remove excess materials temporarily stored on the ditch slope or edge of the shoulder daily. Haul excess material to designated waste area under Section T-832.
6. Remove limbs and wood chunks in excess of 12 inches in length or 3 inches in diameter from ditches and place outside the roadway.
7. Clean paved surfaces of all materials resulting from ditch maintenance work.
8. Shape lead-off ditches to drain away from the traveled way.
9. Invasive species of concern prevention practices shall be followed as listed below, and where:
 - a. Designated on the Ground by the Contracting Officer,
 - b. Included in C(T) 5.31#,
 - c. Shown on the Drawings, or
 - d. As ordered by the Contracting officer.

Invasive Species of Concern Prevention Practices
<i>To be filled in by local FS invasive plant specialist, if applicable.</i>

T-832 - REMOVE AND ENDHAUL MATERIALS (06/2020)

832.01 Description

Work consists of loading, hauling, and placing of slide, slough, or excess materials such as rock, soil, vegetation, and other materials to designated disposal sites.

832.02 Maintenance Requirements

1. Remove, end haul, and dispose of excess materials generated by work under other Sections of this contract.
2. Remove the slide and slough materials to a height of approximately 6 feet vertically above the road surface, upslope from the roadbed, and not more than 3 feet vertically below the road surface down slope from the roadbed. Dispose of material at designated sites as shown on the SALE/CONTRACT AREA MAP, identified in SUPPLEMENTAL SPECIFICATIONS, or as ordered by the Contracting Officer.
3. Reshape the slope which generated the slide material as nearly as practical to its original condition by equipment operating from road surface. Reshaping of roadside ditches in slide area shall be in accordance with Section T-831.
4. When approved by the Contracting Officer, fill slumps by compacting selected materials into roadway depressions. Compaction is by Placement Method 2.
5. Place all materials in disposal sites as specified in the SUPPLEMENTAL SPECIFICATIONS, as shown on the SALE/CONTRACT AREA MAP, or as ordered by the Contracting Officer.
 - a. Placement Method 1 - Side Casting and End Dumping: Material may be placed by side casting and end dumping. Where materials include large rocks, provide a solid fill by working smaller pieces and fines into voids. Shape the finished surfaces to drain.
 - b. Placement Method 2 - Layer Placement: Step or roughen surfaces on which materials are to be placed prior to placing any material. Place materials in approximately horizontal layers no more than 12 inches thick. Compact each layer by operating hauling and spreading equipment over the full width of each layer.
6. Repair any damage to existing aggregate or pavement surfaces.

T-834 - DRAINAGE STRUCTURE MAINTENANCE (06/2020)

834.01 Description

This work consists of cleaning and reconditioning culverts and other drainage structures.

834.02 Maintenance Requirements

1. Clean drainage structures, inlet structures, culverts, catch basins, and outlet channels specified in the SUPPLEMENTAL SPECIFICATIONS. Clean catch basins by removing the material within the area SHOWN ON THE DRAWINGS.
2. Clean the transition from the ditch line to the catch basin 10 feet or more from the catch basin. Clean outlet channels and lead-off ditches 6 feet or more. Remove and place debris and vegetation to not enter the channel or ditch, or obstruct traffic or haul debris and vegetation to a designated disposal area in accordance with Section T-832 when shown on the SALE/CONTRACT AREA MAP, when specified in the SUPPLEMENTAL SPECIFICATIONS, or as ordered by the Contracting Officer,
3. Hydraulic flushing of drainage structures is not allowed unless provided for in the SUPPLEMENTAL SPECIFICATIONS.
4. Cleaning and reconditioning are limited to the first 3 feet of inlet and outlet, determined along the top of the structure. Recondition culvert inlet and outlet by field methods such as jacking out or cutting away damaged metal which obstructs flow. Treat cut edges with a zinc rich coating, in accordance with AASHTO M 36M and ASTM A 849.
5. Where DESIGNATED ON THE GROUND, included in C(T)5.31#, shown on the SALE/CONTRACT AREA MAP, or as ordered by the Contracting Officer, invasive species of concern prevention practices shall be followed as listed below.

Invasive Species of Concern Prevention Practices
<i>To be filled in by local FS invasive plant specialist, if applicable.</i>

T-838 - MAINTENANCE FOR HIGH CLEARANCE VEHICLE USE (06/2020)

838.01 Description

This work consists of making limited use roads passable for project use by Purchaser/Contractor and providing drainage from the traveled way and roadbed.

838.02 Maintenance Requirements

1. Traveled Way

Purchaser/Contractor may smooth or fill existing cross ditches and water bars and, as approved by the Forest Service, modify existing road junctions to enable vehicle access. Prior to beginning haul and resumption of haul after an extended stoppage:

- a. Remove rocks, standing or down trees, and other debris from the 12-foot traveled way. No object extending over 4 inches above the road surface shall remain within the 12 feet usable traveled way. Center the usable width on the roadbed or position away from the fill slope.
- b. Place all removed materials away from drainages.
- c. During use, maintain drainage structures including dips, ditches and culverts in a usable condition.
- d. Clean and recondition drainage facilities in accordance with Section T-831 and T-834.

The Purchaser/Contractor may perform the following work prior to beginning haul and resumption of haul after an extended stoppage:

- a. Remove rocks, standing or down trees, logs, brush, limbs and other debris from turnouts, turnarounds, or other locations that interfere with maintenance.
- b. Remove encroaching limbs to a height of 14 feet above the traveled way surface.
- c. Scatter material not meeting utilization standards outside and below the roadbed on the fill side. Limb and remove timber that meets utilization standards or deck at locations approved by the Forest Service.

2. Slough and Slides

- a. Slough and slides may be left in place when surface drainage is provided and at least 12 feet of width is available for vehicle passage.
- b. Purchaser/Contractor may reposition or ramp over slides and slough when the traveled way width is less than 12 feet providing the material is capable of supporting vehicles. Limit outslope to no more than six percent.
- c. Reposition slough or slide materials, which are not capable of supporting a vehicle, on the roadbed to provide the 12 feet width. When directed by the Forest Service, slough or slide material will be removed under Section T-832.

3. Slumps and Washouts

- a. Drain the roadbed immediately upgrade of slumps and longitudinal cracks to prevent water from entering slump area.
- b. Slumps and longitudinal cracks at the edge of the roadbed shall not be considered a part of the usable width. Usable width may be reduced to 10 feet in the area of the slump.
- c. Unless the Forest Service approves material being placed on slumps, ramp the slumps on both ends into undisturbed roadbed to provide at least 10 feet usable width. Use removed materials to guide vehicles to the ramp location or to aid in draining the area.
- d. Washouts may be filled with suitable material.

4. Post -haul

At the end of hauling or prior to seasonal shutdowns or a period of extended inactivity:

- a. Shape the traveled way and disturbed roadbed to provide functional drainage.

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- b. Reinstall removed cross ditches and water bars and provide any additional drainage structures necessary to offset changes caused through use and maintenance.
- c. Leave roads useable for high clearance vehicles. Remove or reshape Purchaser/Contractor modifications at road junctions to leave the entrance as it was before use, or as agreed at the time of improvement.

T-839 - MAINTENANCE FOR PROJECT USE (06/2020)

839.01 Description

Work consists of providing minimum access required for Purchaser/Contractor's operations and associated Forest Service contract administration while preventing unacceptable resource or road damage.

839.02 Maintenance Requirements

1. Purchaser/Contractor is authorized to perform the following maintenance to provide vehicle passage and drainage:
 - a. Removing log, earth, and rock barriers and/or improving existing road junctions to enable vehicle access as mutually agreed.
 - b. Smoothing or filling existing cross ditches and water bars.
 - c. Installing Purchaser/Contractor-furnished culverts or other temporary drainage structures for shallow stream crossings, as approved by the Contracting Officer.
 - d. Removing brush, fallen trees, rocks, and other materials from the traveled way and other locations that interfere with needed maintenance:
 - i. Place all removed materials away from drainages.
 - ii. Limb and remove timber which meets utilization standards or deck at locations approved by the Contracting Officer. Scatter other woody materials, including limbs, off and below the roadbed without creating concentrations.
 - e. Clean and recondition drainage structures in accordance with Section T-831 and Section T-834.
 - f. Reposition or ramp over slough and slides to provide adequate width of traveled way material.
 - g. Provide traveled way drainage above slumps and seal cracks in slump area. Ramp the slumps on both ends into undisturbed roadbed to provide usable width unless otherwise ordered by the Contracting Officer.
2. During use, the traveled way shall not channel water along the road. Prior to periods of anticipated rains and runoff, perform the following work:
 - a. Shape the traveled way and roadbed to drain.
 - b. Reinstall removed cross ditches and water bars and provide any additional drainage structures necessary to offset changes through use and maintenance.
 - c. Perform work outlined in 839.02 1 (e), (f), and (g).
 - d. During periods of non-use, replace original barrier or provide and maintain standard MUTCD Type 3 barricades unless alternate barriers are approved by the Contracting Officer.

839.03 Post Haul Requirements

1. Upon completion of project use, perform work described in the requirements of 839.02 2 and in accordance with 839.03 2 and 3 or as otherwise provided for in the SUPPLEMENTAL SPECIFICATIONS or C(T)5.31#.
2. Roads designated in C(T)5.31# to be blocked shall conform to the requirements of Section T-835. Unless otherwise approved by the Contracting Officer, remove Purchaser/Contractor-installed temporary structures from National Forest System land. Associated commercially obtained materials shall remain the property of the Purchaser/Contractor.
3. Remove or reshape Purchaser/Contractor improvements at road junctions, as approved by the Contracting Officer at the time of improvement.

T-891 - WATER SUPPLY AND WATERING (06/2020)

891.01 Description

This work consists of providing facilities to furnish an adequate water supply, hauling, and applying water.

891.02 Materials

1. If the Purchaser/Contractor elects to provide water from other than designated sources, the Purchaser/Contractor is responsible to obtain the right to use the water, including any cost for royalties involved.
 - a. Suitable and adequate water sources available for Purchaser/Contractor's use under this contract are designated as follows:

Map Key No.	Location - Road	Location - Milepost	Use Restrictions
	1900403 WATER FILL		

891.03 Equipment

1. Positive control of water application is required. Equipment shall provide uniform application of water without ponding or washing.
2. An air gap or positive anti-siphon device shall be provided between the water source and the vehicle being loaded if the vehicle has been used for other than water haul, if the source is a domestic potable water supply, or the water is used for tank-mixing with any other materials.
3. The designated water sources may require some work prior to their use. Such work may include cleaning ponded areas, installing temporary weirs or sandbags, pipe repair, pump installation, or other items appropriate to the Purchaser/Contractors's operations. Flowing streams may be temporarily sandbagged or a weir placed to pond water, provided a minimum flow of ___ cu. ft/sec is maintained. Obtain approval from the Contracting Officer on improvements for sandbags or weirs prior to placement.
4. Juvenile fish protection. The Purchaser/Contractor shall utilize (1) one of the following methods of screening on any draft hoses used unless otherwise approved by Contracting Officer.
 - a. Perforated Plate: Screen openings shall not exceed 3/32 or 0.0938-inches (2.38mm).
 - b. Profile Bar Screen: The narrowest dimension in the screen openings shall not exceed 0.0689- inches (1.75-mm).
 - c. Woven Wire Screen: Screen openings shall not exceed 3/32 or 0.0938-inches (2.38 mm).
 - d. All screening methods shall be cleaned frequently either with wire brushing, flushing, or any other acceptable method.